

FLOOR STOP FOR A MOBILE BASE

CROSS-REFERENCES TO RELATED APPLICATIONS

[0001] This application claims the benefit of co-pending provisional application
5 60/429,094 filed 11/26/2002.

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0002] The invention relates to mobile base assembly having wheels for supporting
equipment for movement over a support surface and, more specifically, to an anchor
10 mechanism for lifting the wheels from the support surface and anchoring the assembly
to the support surface.

2. Description of the Related Art

[0003] Mobile base frames are well known to those skilled in the art for
transporting heavy or awkward equipment. A typical mobile frame comprises a frame
15 having wheels or some form of rolling mechanism attached to the frame to facilitate
movement. The equipment is secured to the frame and is easily moved between
locations because of the wheels attached to the frame. One of the problems
encountered in developing a mobile frame is anchoring the mobile frame once the
mobile frame is moved to a new location.

20 [0004] Prior art mechanisms have been developed to serve the purpose of anchoring
mobile base frames. Brakes have been developed, such as are commonly employed
on wheelchairs, in which a metal rod is clamped down laterally across one or more of
the wheels. Still, other mechanisms have been developed for immobilizing wheeled
contraptions by preventing wheel rotation. Such devices are very effective but have

some drawbacks. In particular, if the frame is employed in a wet or corrosive environment, it would extend the life of the wheels to lift them off the floor. In addition, when using the frame under a heavy load for extended periods, it might prevent wheel damage to shift the weight off the wheels onto a more dispensable
5 load-bearing mechanism.

[0005] As a result, there is a need in the art for a floor stop for a mobile base utilizing a lever to extend a stopping arm, thereby locking the base and, if desired, raising the wheels of a mobile frame off the ground.

10 **BRIEF SUMMARY OF THE INVENTION AND ADVANTAGES**

[0006] The invention provides a mobile base assembly for supporting equipment for movement over a support surface and comprising a frame, a plurality of wheels attached to the frame for movably supporting the frame on the support surface, and an anchor mechanism for lifting the wheels from the support surface and anchoring the
15 frame to the support surface. The anchor mechanism includes at least one plate attached to the frame, an anchor member pivotally mounted on the plate for pivotal movement between an anchor position and a retracted position, and a foot attached to the anchor member and having a base for engaging the support surface in the anchor position. A biasing member reacts between the plate and the anchor member to bias
20 the anchor member to pivot to the retracted position. A lever is pivotally mounted on the plate and presents a cam for engaging and pivoting the anchor member against the biasing reaction of the biasing member from the retracted position to the anchor position in response to the lever being moved from the retracted position to the anchor position.

[0007] Accordingly, the invention provides an anchor mechanism to prevent movement of the mobile base and, if desired, raise the wheels of a mobile frame off the support surface. The anchor mechanism may be attached to an existing frame or mobile unit as an after market device as well as an OEM device.

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BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0008] Other advantages of the present invention will be readily appreciated as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings wherein:

- 10 [0009] Figure 1 is a side view of the anchor mechanism in the anchor position;
[0010] Figure 2 is an exploded view of the anchor mechanism;
[0011] Figure 3 is a side view of the anchor mechanism in the retracted position with the outer plate removed;
[0012] Figure 4 is a side view of the anchor mechanism in the anchor position with
15 the outer plate removed; and
[0013] Figure 5 is an exploded view of another embodiment of a foot.

DETAILED DESCRIPTION OF THE INVENTION

- [0014] Referring to the Figures, wherein like numerals indicate like parts
20 throughout the several views, an anchor mechanism is generally shown at 10 for lifting the wheels 12 supporting a frame 14 of a mobile base assembly from a support surface 16 and anchoring the frame 14 to the support surface 16. A plurality of wheels 12 is attached to the frame 14 for movably supporting the frame 14 on the support

surface 16. The mobile base assembly supports equipment 18 for movement over the support surface 16, such a floor.

[0015] The anchor mechanism 10 includes inner 20 and outer 22 plates attached to the frame 14. The inner plate 20 contains a first set of spacer holes 24 and the outer
5 plate 22 contains a second set of spacer holes 26 for alignment with the first set of spacer holes 24 of the inner plate 20. A plurality of cylindrical spacers 28 are disposed between the plates 20, 22 in alignment with the respective spacer holes 24, 26 for spacing the plates 20, 22 in spaced parallel relationship to one another. A plurality of pins extend through the aligned spacer holes 24, 26 and the spacers 28 and into the
10 frame 14 for maintaining the plates 20, 22 in the parallel relationship and attached to the frame 14 with the inner plate 20 disposed adjacent to the frame 14.

[0016] The plurality of pins includes a first pin 30, defined by a threaded bolt and nut 32, extending through a spacer 28 between the plates 20, 22 and pivotally mounting an anchor member 34 on and between the plates 20, 22 for pivotal
15 movement between the anchor position of Figure 4 and the retracted position of Figure 3. The plurality of pins also includes a second pin 36, defined by a threaded bolt and nut 38, extending through a spacer 28 between the plates 20, 22 for maintaining the plates 20, 22 in the parallel relationship and attached to the frame 14 with the inner plate 20 disposed adjacent to the frame 14.

20 [0017] A foot, generally indicated at 40, is attached to the anchor member 34 and includes a base 42 for engaging the support surface 16 in the anchor position and a threaded shaft 44 engaging a threaded hole in anchor member 34. The base 42 may be fixed to, e.g., integral with, the threaded shaft 44 or threaded to the threaded shaft 44 as illustrated in Figure 5. More specifically, the anchor member 34, as shown in

Figure 2, includes top 46 and bottom 48 edges and presents a foot flange 50 extending laterally from the bottom edge 48 and attached to the foot 40. The anchor member 34 presents and the foot flange 50 extends laterally from the bottom edge 48 thereof to a distal edge underlying the outer plate 22 and defines a threaded hole disposed outside
5 of the outer plate 22 for threadedly engaging the threaded shaft 44 of the foot 40. The outer plate 22 has a recess 52 therein for receiving the foot flange 50 in the retracted position. In addition, the anchor member 34 presents a guide flange 54, shown in phantom in Figure 2, spaced along the bottom edge 48 from the foot flange 50 and extending laterally from the bottom edge 48 thereof to a distal edge adjacent the inner
10 plate 20.

[0018] The anchor member 34 also presents a cam flange 56 extending laterally from the top edge 46 thereof toward the inner plate 20. The cam flange 56 and the guide flange 54 extend the same distance from the inner flat face of the anchor member 34 to space the anchor member 34 from the inner plate 20. A spring stop 58
15 extends inwardly from the inner plate 20 along the top edge 46 thereof. A spring 60 is coiled around the first pin 30 and has a first arm 62 disposed under the cam flange 56 and a second arm 64 engaging the spring stop 58 to define a biasing member for reacting between the inner plate 20 and the anchor member 34 to bias the anchor member 34 to pivot to the retracted position.

20 [0019] A lever pin 66, comprising a bolt and nut 68, extends between the plates 20, 22 above the anchor member 34 and a lever 70 is pivotally mounted on and between the plates 20, 22 via the lever pin 66 for movement between the anchor and retracted positions. More specifically, a cam 72 is disposed on or protrudes from the lever 70 for engaging the cam flange 56 and pivoting the anchor member 34 against the

biasing reaction of the spring 60 from the retracted position (Figure 3) to the anchor position (Figure 4) in response to the lever 70 being moved from the retracted position to the anchor position. Accordingly, in addition to reacting with the arm 62 of the spring 60, the cam flange 56 extends laterally from the top edge 46 of the anchor member 34 toward the inner plate 20 for engaging the cam 72 on the lever 70 for pivoting the anchor member 34.

[0020] Obviously, many modifications and variations of the present invention are possible in light of the above teachings. The invention may be practiced otherwise than as specifically described within the scope of the appended claims. In addition, the reference numerals in the claims are merely for convenience and are not to be read in any way as limiting.